

Establishing Cost Reduction Targets
for the DoD
Information Infrastructure
Part 1 - DPI's and CDA's

October 27, 1992

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First Wave of Data Center Consolidations - 1991-1997 (\$ Millions)

<u>Component</u>	<u>Base Line*</u>	<u>Savings*</u>	<u>% Gain</u>	<u>Productivity/ Annum</u>
Army	266	\$79	30	+14%
Navy	981	218	22	+11.5%
Air Force	313	119	38	+16%
DLA	<u>374</u>	<u>91</u>	<u>24</u>	<u>+12%</u>
Totals	\$1,934	\$507	26	+12.5%

* Going Rate in 1997

Xerox Data Center Pricing Trends

	<u>86</u>	<u>87</u>	<u>88</u>	<u>89</u>	<u>90</u>	<u>91</u>	<u>92</u>
Volume Growth	—	+23%	+29%	+29%	+36%	+50%	+31%
Staff	268	255	254	242	232	236	232
Price Cut	—	-18%	-31%	-31%	-16%	-20%	-28%
1986 Relative Cost	\$1.00	82¢	57¢	39¢	33¢	26¢	19¢

Compound Annual Productivity Growth: +25%

SOURCE: Director, Technology Services and Strategy, Xerox Corporation, 10/21/92

Contractor Performance on DEERS Transaction Services

<u>Transactions</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>
Champus Inquiries [\$441,000]* Productivity Gain/Year	\$0.0334 —	\$0.0302 +9.5%	\$0.0199 +34.3%	\$0.0144 +27.6%
Eligibility Inquiries [\$553,000]* Productivity Gain/Year	\$0.0261 —	\$0.0228 +12.8%	\$0.0209 +8.2%	\$0.0188 +10.2%
On-Line Updates [\$226,000]* Productivity Gain/Year	\$0.0416 —	\$0.0333 +20.0%	\$0.0263 +21.0%	\$0.0215 +18.3%
Batch Updates [\$338,000]* Productivity Gain/Year	\$0.0759 —	\$0.0588 +22.6%	\$0.0424 +27.8%	\$0.0316 +25.4%
Batch Tape Updates [\$260,000]* Productivity Gain/Year	\$0.0547 —	\$0.0452 +17.4%	\$0.0312 +31.1%	\$0.0258 +17.3%

Dollar weighted annual productivity gain: +18.8%

SOURCE: Office of the ASD Health Affairs, August 1992; * 1991 expenditures for transactions

Data Center Consolidation Case - Gains Realized in Two Years

<u>Cost Element</u>	<u>Karastan</u>	<u>Bigelow</u>	<u>Consolidated</u>	<u>% Gain</u>
MIPS	2	10	12	0%
Disk Capacity	4GB	20GB	15GB	- 40%
IT Staff	16	34	19	-62%
IT Budget	\$2.0M	\$3.4M	\$3.5M	-35%

SOURCE: Computer Economics, Inc. - DP Budget Bulletin, November 1992, p.4

Data Center Rate* Reductions from DITSO "Utility"

	<u>FY 92 Rates</u>	<u>FY 94 Rates</u>	<u>% Reduction</u>
IBM CPU Hour	210.47	144.60	-31.3%
Input/Output	0.209	0.111	-44.7%
Tape Mounts	4.0247	2.5361	-37.0%
Disk Storage	0.00146	0.00122	-16.7%
Tape Storage	0.1482	0.0611	-58.8%
Printed Page	0.0402	0.0286	-28.9%
Microfiche	0.3565	0.338	-4.9%
Cards Punched	0.0414	0.0509	+23.0%
Support Services	38.46	26.91	-30.0%

Estimated weighted average productivity gains: 18%

* \$ per unit of output. Depreciation included in all rates.

Benchmarking IPC Personnel Costs by Operating Function

<u>IPC Function</u>	<u>DoD Sample</u>	<u>Industry Average*</u>	<u>Industry Best*</u>	<u>Potential Average Savings/yr</u>	<u>Potential Best Savings/yr</u>
Print & Distribution	0.368	0.174	0.03	\$121,159	\$211,878
Tape Operations	0.286	0.237	0.077	\$30,716	\$130,893
Console Operations	0.245	0.128	0.058	\$73,378	\$117,268
Administration	0.18	0.09	0.022	\$56,313	\$98,549
Customer Service	0.169	0.071	0.018	\$61,433	\$94,709
Schedulers	0.125	0.046	0.016	\$49,488	\$68,731
13 Other Functions				<u>\$124,572</u>	<u>\$400,850</u>
Total Savings (\$000)				\$517,059	\$1,122,878
% Labor Savings Potential				30.2%	65.5%
Required Annual Productivity Gains (1993-1999)				+14%	+21%

*SOURCE: Peat, Marwick & Mitchell Consulting study, Summer 1992 [Personnel employed per MIPS]. Est. personnel costs: \$1.8 B

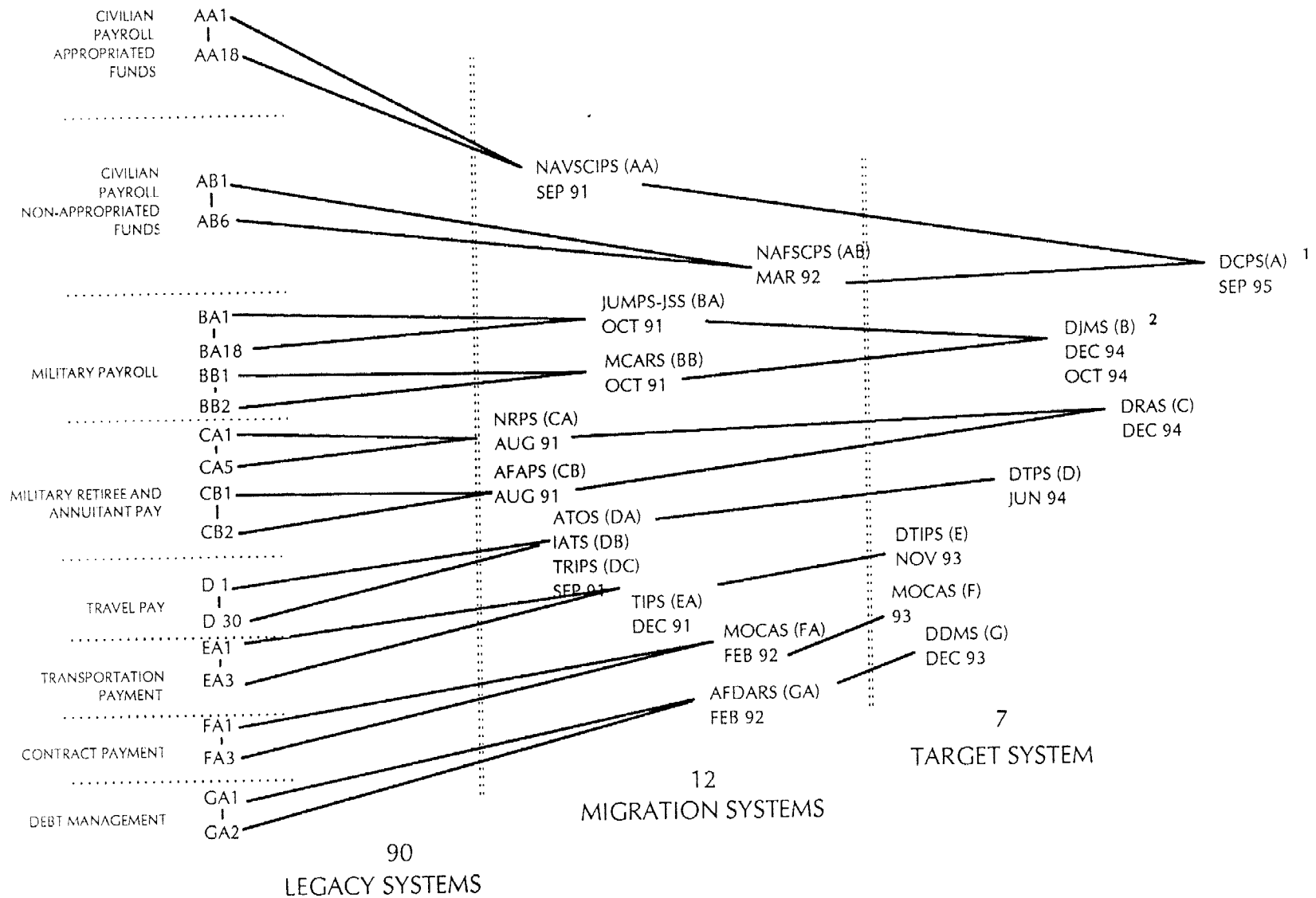
Xerox Network Services Pricing Trends

<u>Year</u>	<u>Cents/minute</u>	<u>% Decrease</u>
1987	31.6	—
1988	26.9	-15.0
1989	22.5	-15.0
1990	20.2	-10.0
1991	15.0	-20.0
1992	13.0	-13.3

Average Price Decrease: -14.7%

SOURCE: Director, Technology Services and Strategy, Xerox Corporation, 10/21/92

Financial Function - Systems Summary



Appropriated Funds Civilian Payroll

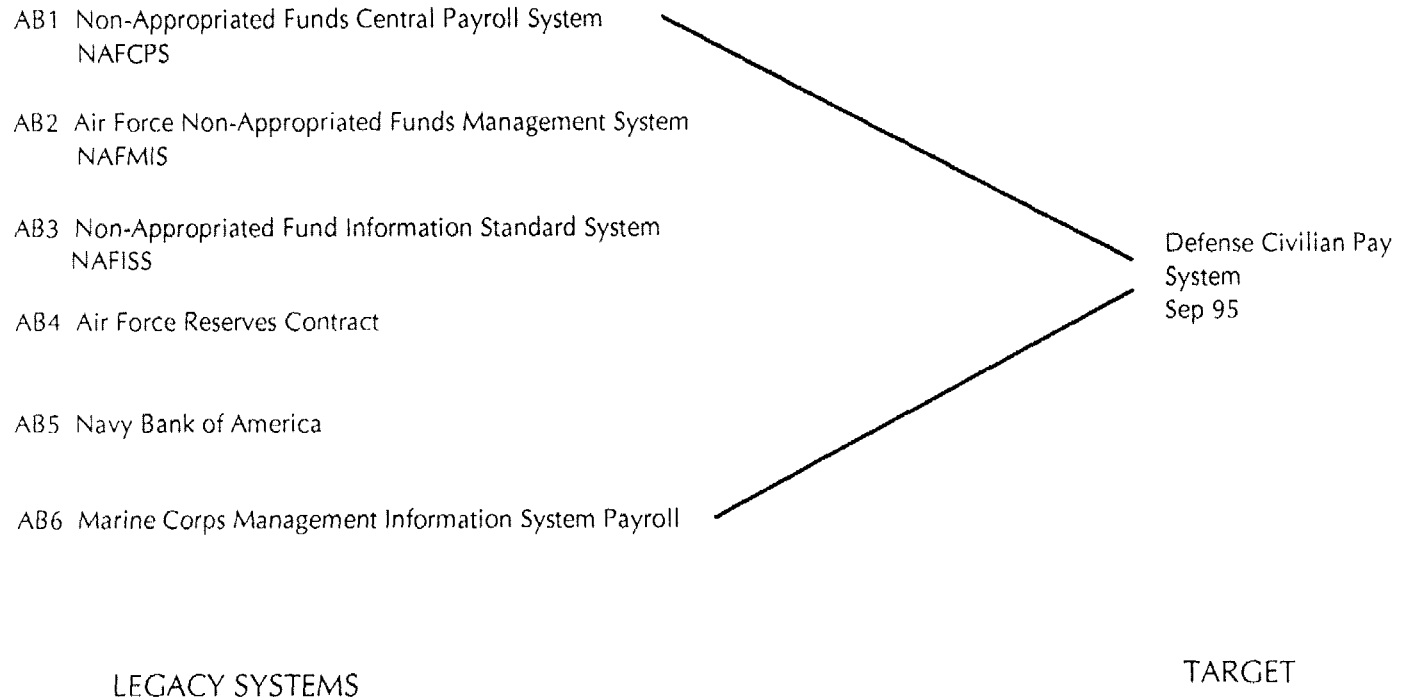
AA1 Corporation of Engineers Payroll System; COEPAY
AA2 Standard Army Civilian Pay System Redesign; STARCIPS-R
AA3 Standard Army Civilian Pay System STARCIPS
AA4 Standard Army Technicians Payroll System STARTEPS
AA5 Marine Corps Automated Leave/Pay SystemALPS
AA6 Military Sealift Command Civilian Mariner Pay MSC-CIVPAY
AA7 Naval Underwater Systems Center Civilian Payroll System CIVPAY
AA8 Naval Standard Civilian Payroll System NAVCIPS
AA9 Naval Ordnance Management Information SystemNOMIS
AA10 Shipyard Management Information SystemSYMIS
AA11 Uniform Automated Data Processing SystemUADPS-K
AA12 Uniform Financial Management SystemUFM-BOND
AA13 Naval Regional Finance Centers Uniform Financial Management System
Civilian Pay SystemCIVPAY-UFM
AA14 Facilities Engineering Activities Civilian Pay System CIVPAY-FEA
AA15 Naval Research Laboratory Payroll CIVPAY-NRL
AA16 Air Force Civilian Automated Payroll System AFSCAPS
AA17 Centralized Civilian Payroll System COPS
AA18 Naval Avionics Center, Indiana NAC
AA19 Naval Avionics Engineering Center NACC

LEGACY SYSTEMS

Defense Civilian Pay
System
Sep 95

TARGET

Non-appropriated Funds Civilian Payroll



Debt Management Systems

GA1 Debt Management Collection
System
DMCS

GA2 Out of Service Debt Management System
(Navy)

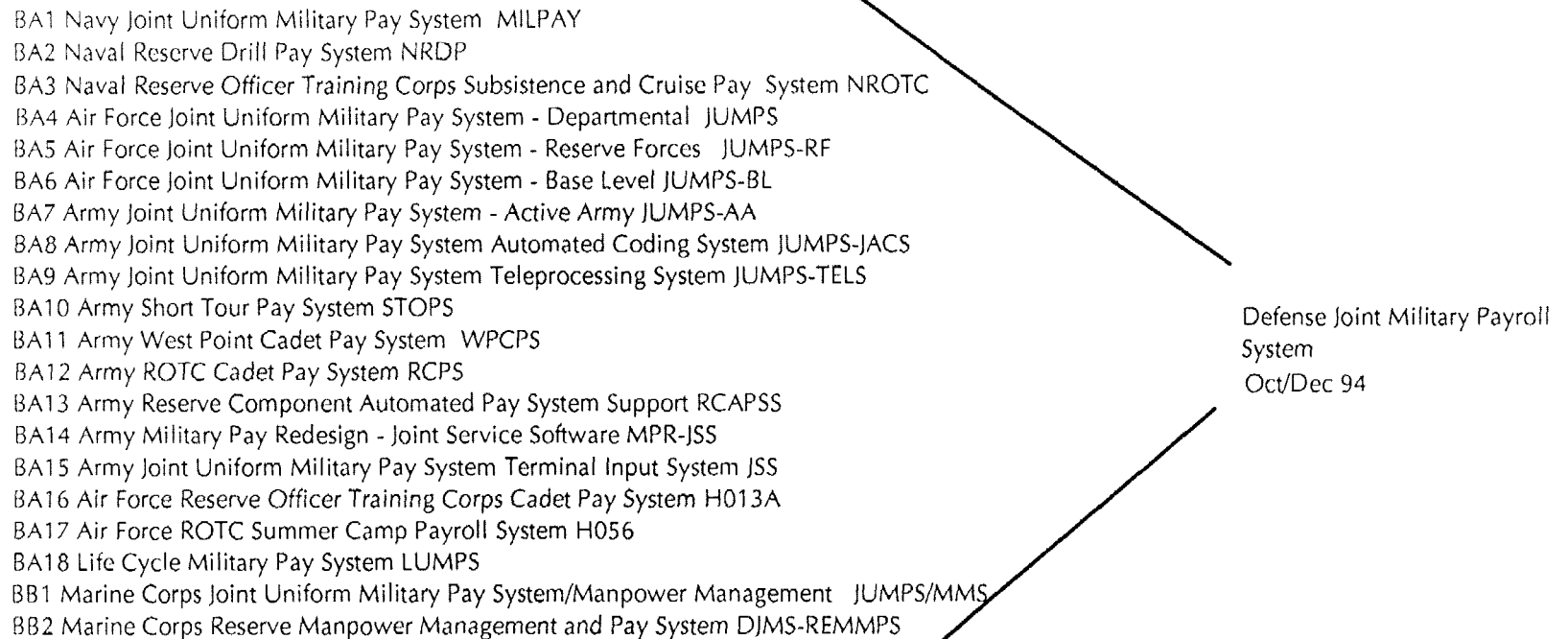
GA3 Out of Service Debt Management System
(Army)

LEGACY SYSTEMS

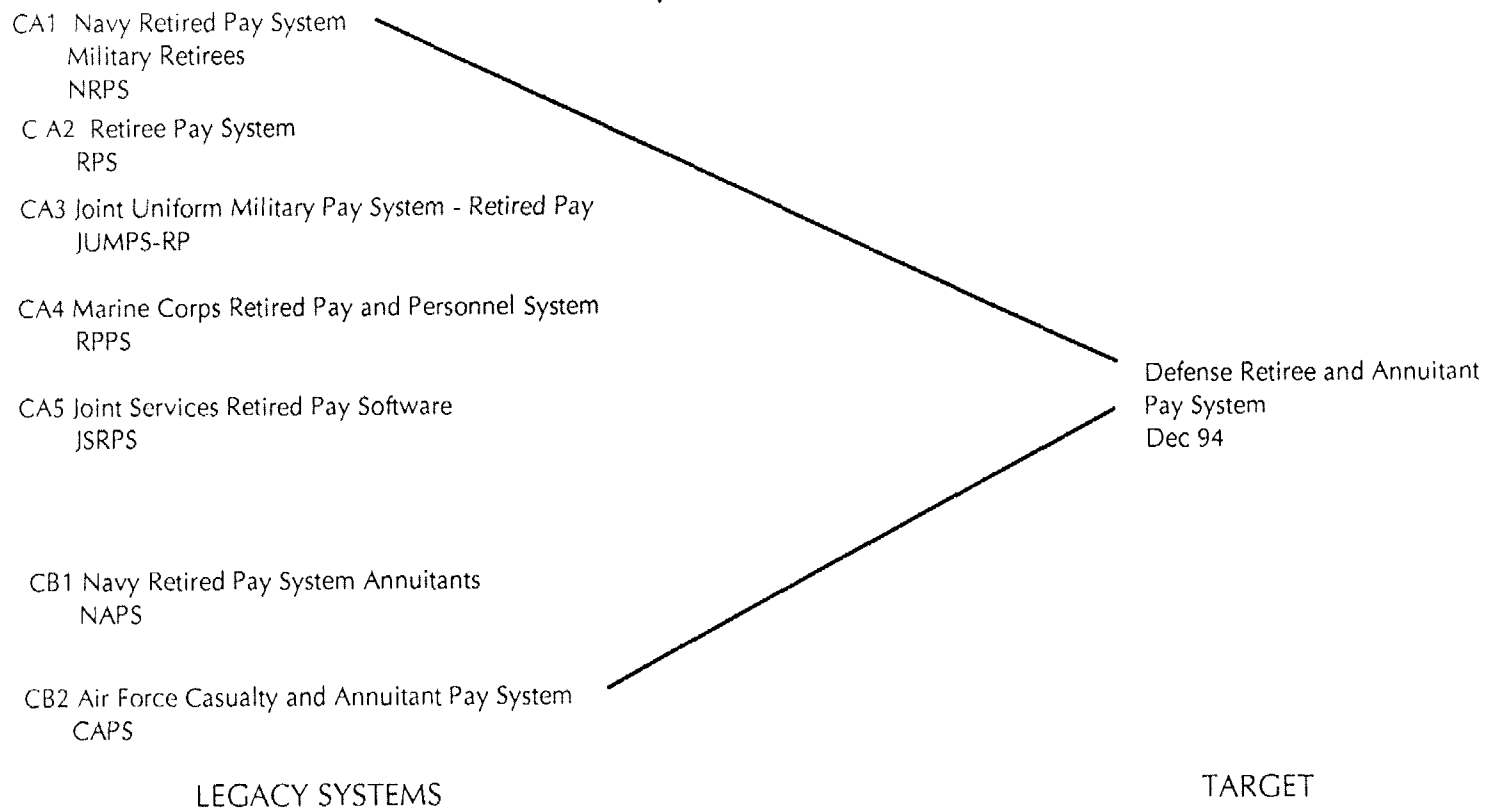
Defense Debt Management
System
Dec 93

TARGET

Military Payroll System



Military Retiree and Annuitant Pay



Transportation Payment Systems

EA1 Army Transportation and Disbursing Report
TDRS

EA2 Electronic Document Management System -
Loss and Damage
EDMS

EA3 Integrated Accounts Payable System
IAPS

LEGACY SYSTEMS

Defense Transportation Payment
System
Nov 93

TARGET

Travel Pay Systems

DA1 Automated Travel Record Accounting System ATRAS

DA2 Integrated Army Travel System IATS

DA3 Automated Travel Order System ATOS

DA4 Automated Voucher Examination Disbursing System AVEDS

DA5 Marine Corps Travel Advance and Settlement System MCTASS

DA6 Civilian Manpower and Funding Report 1092

DA7 Per Diem Rates Maintenance System PDRMS

DA8 Inter-Departmental Fund Billing Group System IFBG

DA9 Microcomputer Claims Processing System MCP5

DA10 Permanent Change of Station (PCS) Reservation/
Obligations Database System PRODS

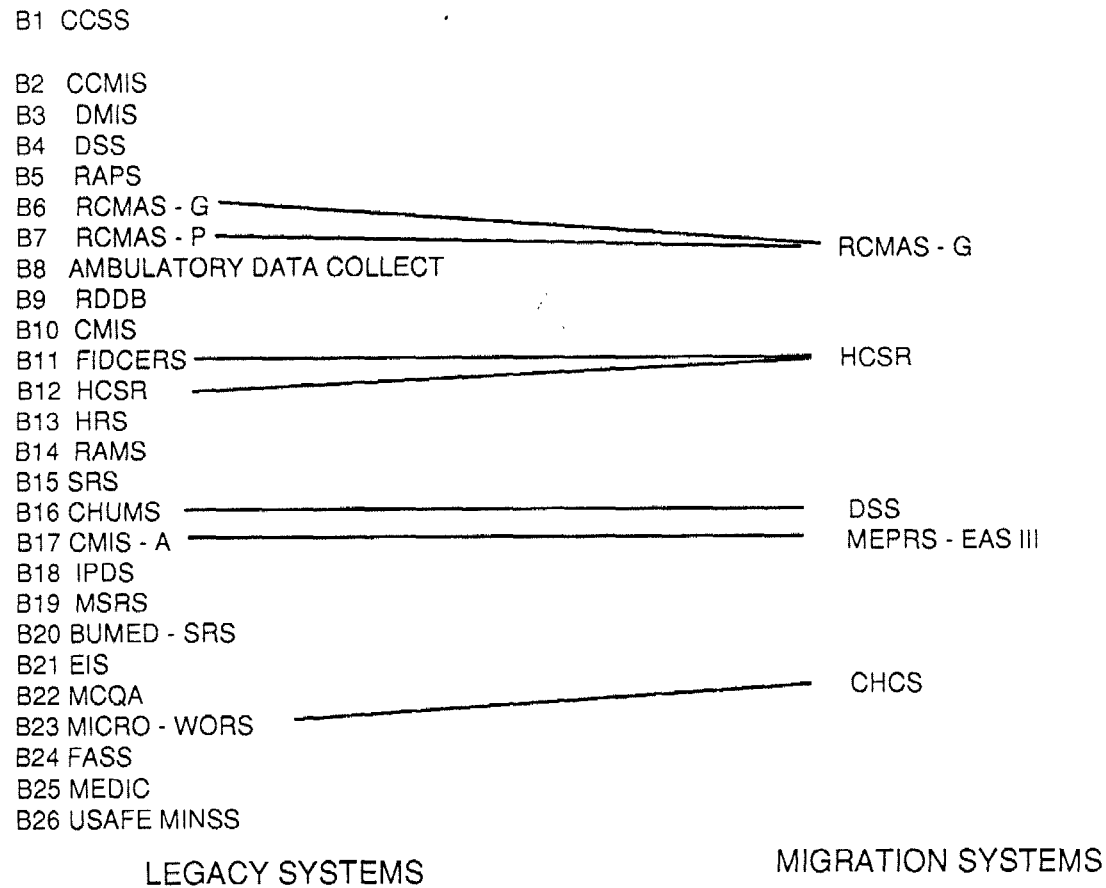
DA11 Standard Finance System - Redesign STANFINS-R

LEGACY SYSTEMS

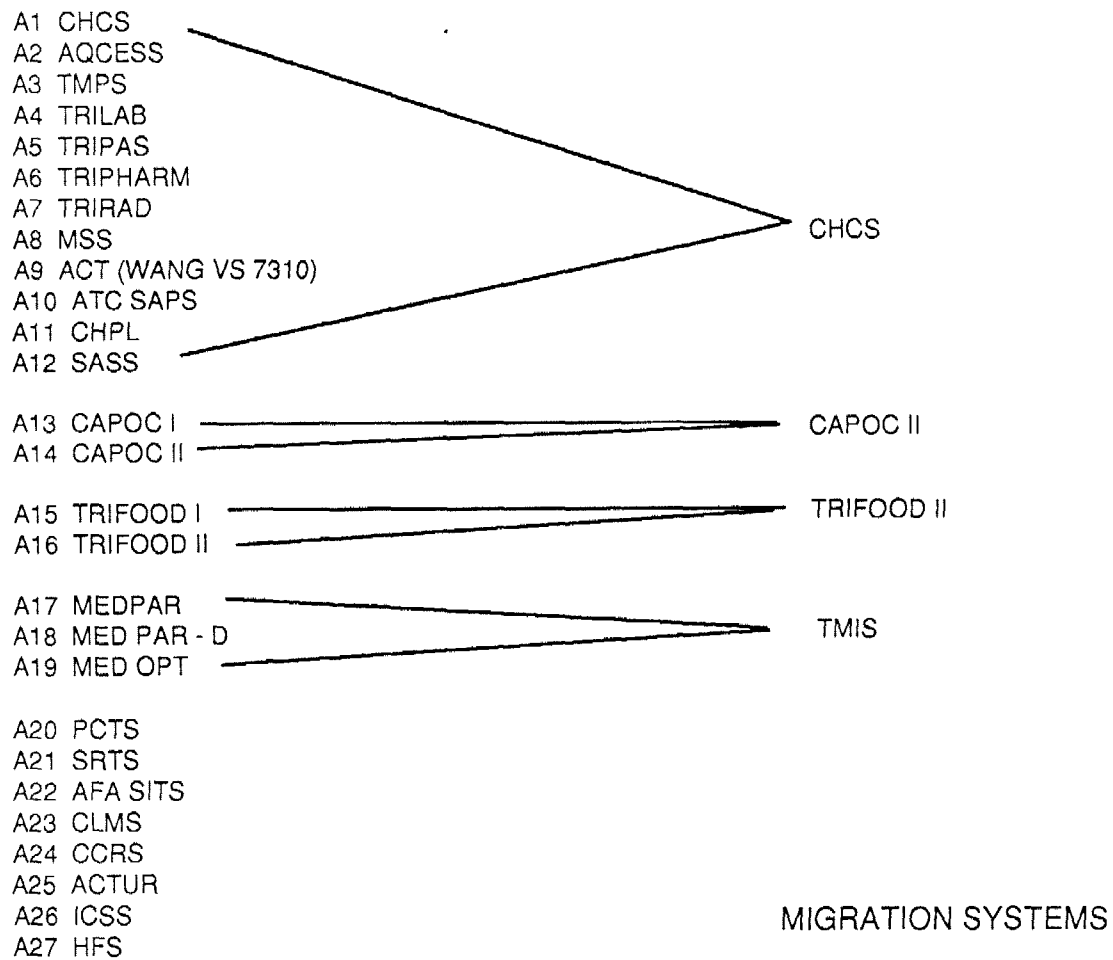
Defense Travel Pay System
Jun 94

TARGET

Health Functional Area - MIS/DSS Systems



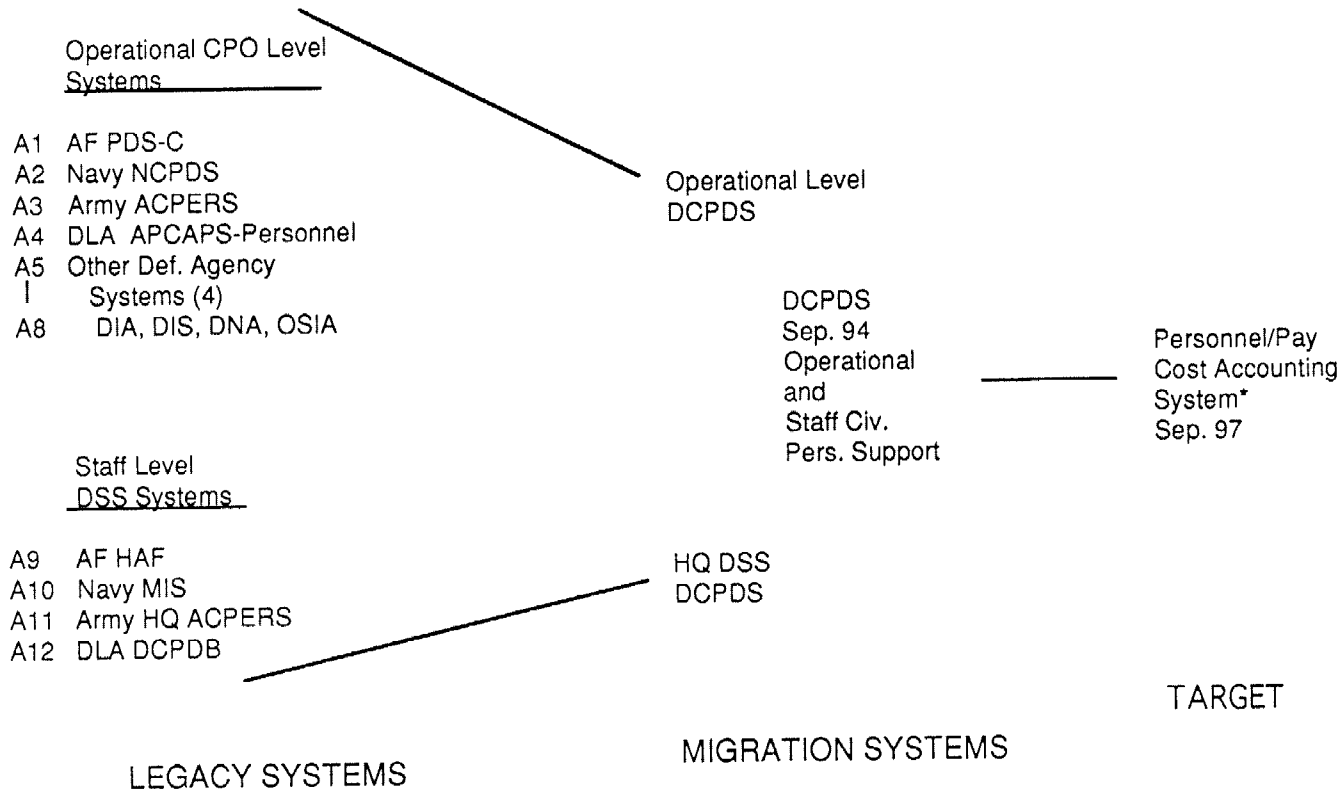
Patient Care Systems



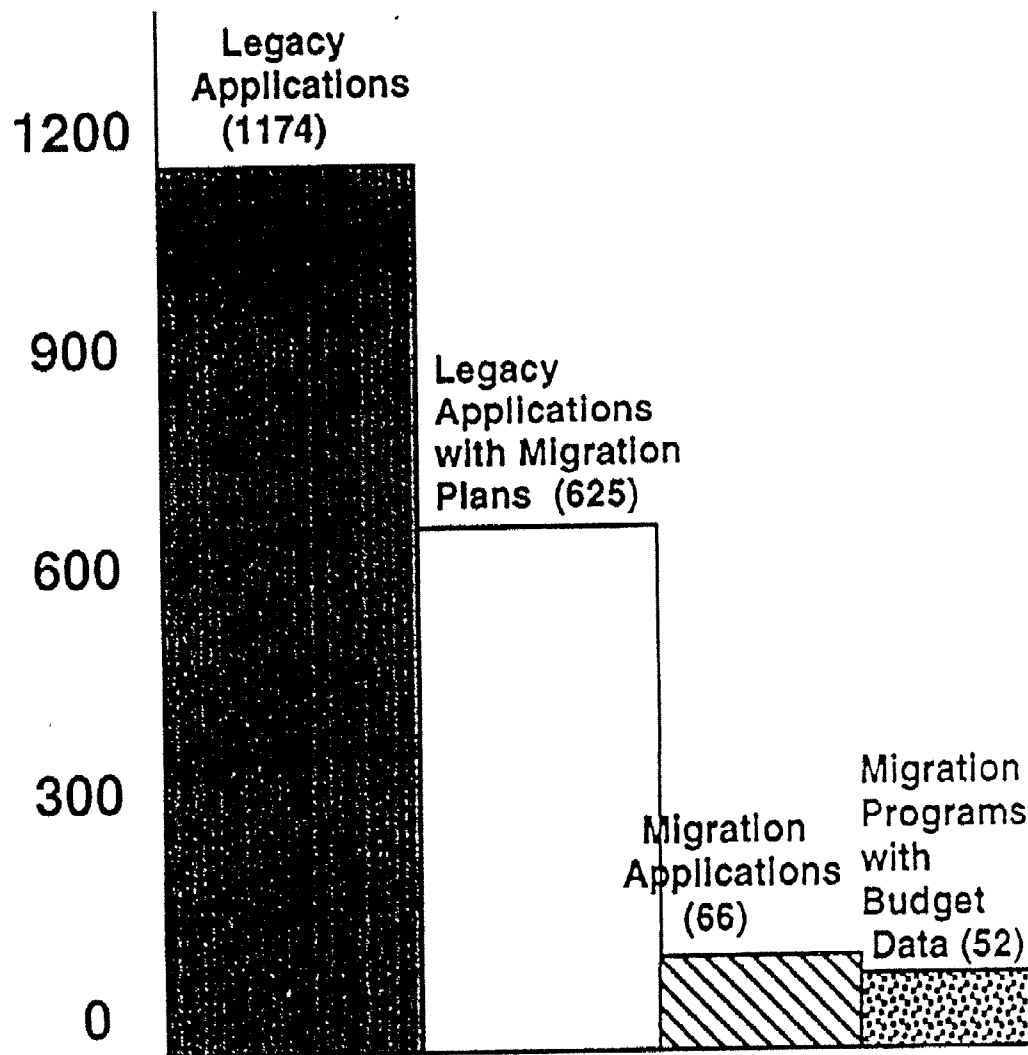
LEGACY SYSTEMS

MIGRATION SYSTEMS

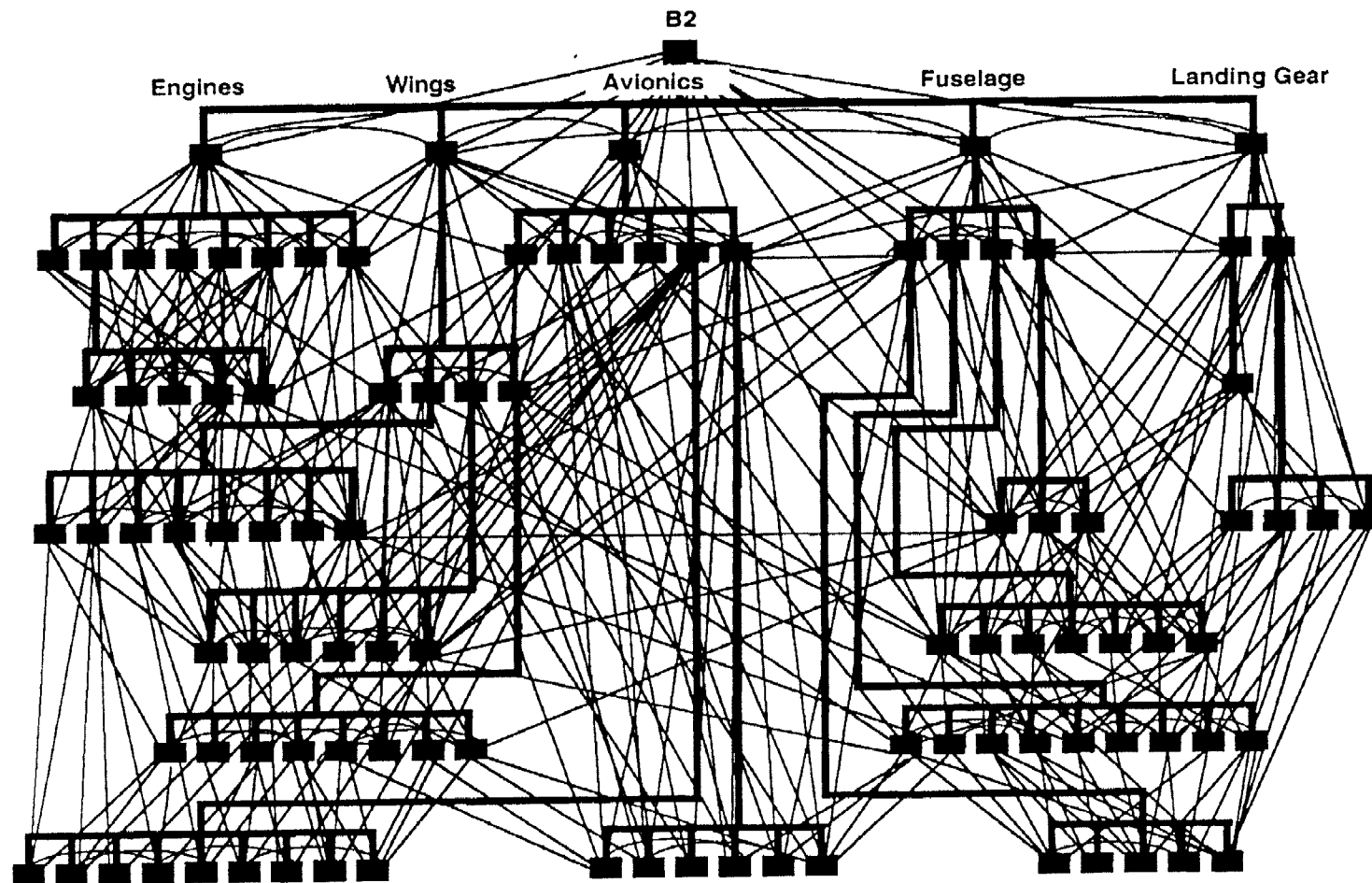
Civilian Personnel Resources Systems



Current Status of Application Migration Planning



Information Processing Without Integrated Data Bases



SOURCE: D.S.Appleton, Building a Business Case for CITIS, CALS Journal, Spring 1992, p.39

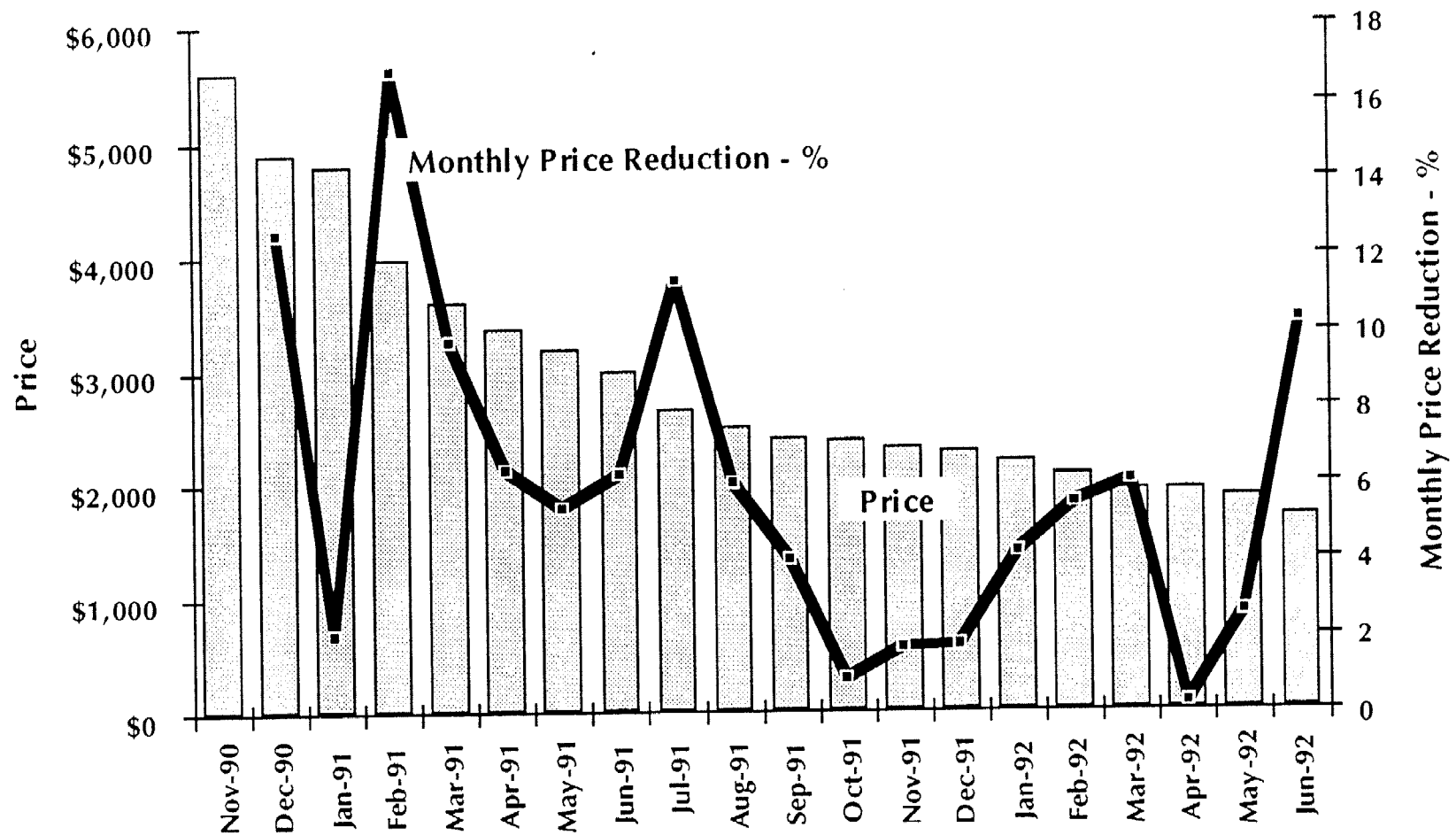
Ada Software Component Reuse at Gunter AFB

<u>Application</u>	<u>Lines of Code</u>	<u># of Reusable Components</u>	<u>% of Code Reused</u>
Inventory Control - LOGMARS II	18,673	10	64%
Inventory Control - LABELS *	8,846	7	73%
Stock Fund - MAJCOM	20,529	10	65%
Repairable Support	15,355	10	66%

NOTE: Written by three programmers in three days, or 983 lines of code/programmer/day. Estimated productivity gain over 1,000%.

SOURCE: Memorandum from Lloyd Mosemann, 19 June 92, report by Capt. Brown/LGSXD

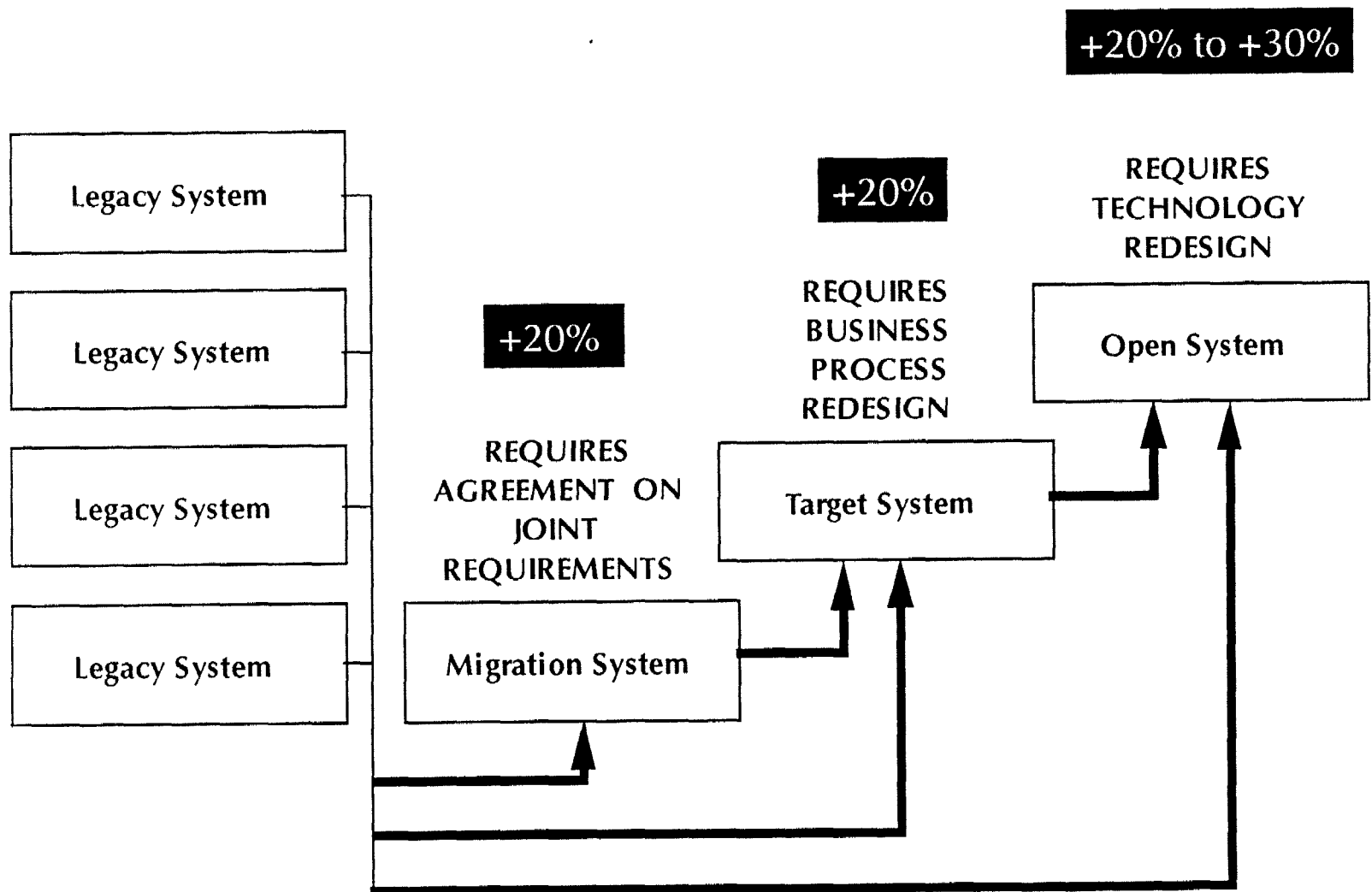
Prices and Price Changes of 486/33 Microcomputers



Average Monthly Price Reduction: 6%

Source: MicroTechnology Service, International Data Corporation

1993-1999 Productivity Gain Targets for CIM Applications



The Setting for IT Savings - Conventional Thinking Won't Do

